

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
17 January 2008 (17.01.2008)

PCT

(10) International Publication Number
WO 2008/006241 A1

(51) International Patent Classification:
G06F 17/00 (2006.01)

(21) International Application Number:
PCT/CN2006/001550

(22) International Filing Date: 3 July 2006 (03.07.2006)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant (for all designated States except US): **INTEL CORPORATION** [US/US]; 2200 Mission College Boulevard, Santa Clara, CA 95052 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **CHEN, Yurong** [CN/CN]; Room 503, Unit 1, Building 4, QingFengHua-Jing Yuan, Haidian District, Beijing 100083 (CN).

(74) Agent: **CHINA PATENT AGENT (H.K.) LTD.**; 22/F, Great Eagle Centre, 23 Harbour Road, Wanchai, Hong Kong (CN).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

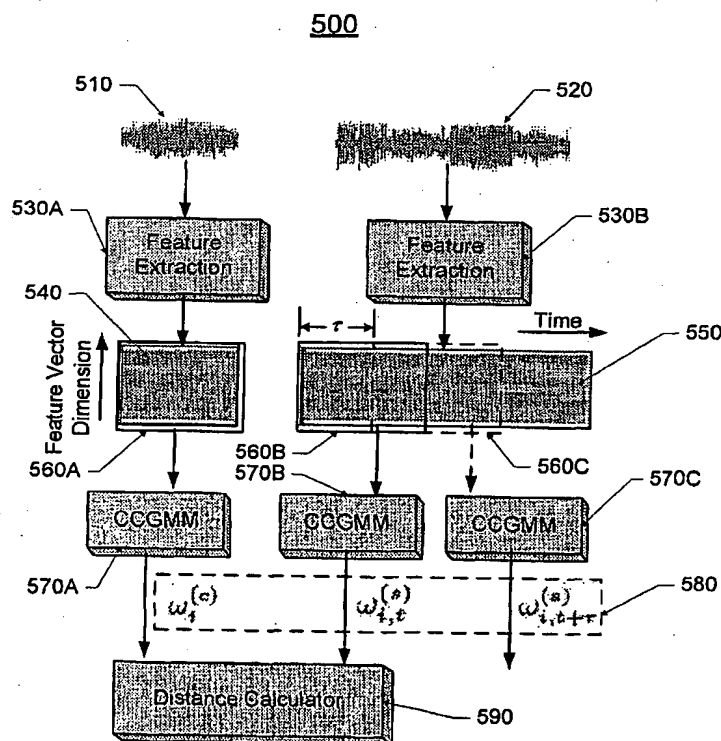
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

[Continued on next page]

(54) Title: METHOD AND APPARATUS FOR FAST AUDIO SEARCH



(57) Abstract: According to embodiments of the subject matter disclosed in this application, a large audio database in a multiprocessor system may be searched for a target audio clip using a robust and parallel search method. The large audio database may be partitioned into a number of smaller groups, which are dynamically scheduled to available processors in the system. Processors may process the scheduled groups in parallel by partitioning each group into smaller segments, extracting acoustic features from the segments; and modeling the segments using a common component Gaussian Mixture model ("CCGMM"). One processor may also extract acoustic features from the target audio clip and model it using the CCGMM. Kullback-Leibler (KL) distance may be further computed between the target audio clip and each segment. Based on the KL distance, a segment may be determined to match the target audio clip; and/or a number of following segments may be skipped.



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.